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09/779,866	02/08/2001	James E. Pricer	9517	6672

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HAMILTON, MONPLAISIR G

ART UNIT	PAPER NUMBER
2172	

2172

DATE MAILED: 02/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

<table>
<tr><td rowspan="2" colspan="2">Office Action Summary</td><td colspan="2">Application No.</td><td colspan="2">Applicant(s)</td></tr>
<tr><td colspan="2">09/779,866</td><td colspan="2">PRICER, JAMES E.</td></tr>
<tr><td colspan="2">Examiner</td><td>Art Unit</td><td></td></tr>
<tr><td colspan="2">Monplaisir G Hamilton</td><td>2172</td><td></td></tr>
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-- The MAILING DATE of this communication appears on the cover sheet with the correspond nce address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>08 February 2001</u> .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ · Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-27</u> is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-27</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>08 February 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)   4)☐ Interview Summary (PTO-413) Paper No(s). _____ .
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   5)☐ Notice of Informal Patent Application (PTO-152)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .   6)☐ Other: .

DETAILED ACTION

1. Claims 1-27 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2.   Claim 1-6, 14-22, and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable

over US 5878419 issued to Carter, herein referred to as Carter further in view of US 5974396

issued to Anderson et al.

Referring to Claims 1 and 20:

        Carter discloses a method for use in analyzing associations in the order of transactions,

the method comprising loading data from the transactions into a database system (col 3, lines 55-

68; col 4, lines), where the data includes an entry for each transaction and the transactions are

grouped into groups (col 6, lines 40-45; col 8, lines 20-25; col 9, lines 40-50);

        Carter does not explicitly disclose the claimed "ordering the transactions within each

group; and performing an analysis of the groups of transactions to find associations in the order

of the transactions in the groups".

Anderson discloses ordering the transactions within each group; and performing an analysis of the groups of transactions to find associations in the order of the transactions in the groups (col 6, lines 34-45).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the teachings of Carter such that the transaction groups are analyzed to determine associations. One of ordinary skill in the art would have been motivated to do this because it would provide a system that can determine consumer buying habits (col 6, lines 45-48).

Referring to Claim 24:

Carter discloses database system for use in analyzing associations in the order of transactions, the database system comprising a massively parallel processing system (col 6, lines 1-6) comprising one or more nodes; a plurality of CPUs, each of the one or more nodes providing access to one or more CPUs (col 5, lines 30-50); a plurality of virtual processes each of the one or more CPUs providing access to one or more virtual processes; each virtual process configured to manage data stored in one of a plurality of datastorage facilities (col 5, lines 60-68; col 6, lines 1-10); a parsing engine configured to parse transaction data and store the parsed transaction data in a table that is distributed across two or more data-storage facilities (col 3, lines 55-68, col 4, lines 1-5), where the data includes an entry for each transaction and the transactions are grouped into groups (col 4, lines 5-15; col 6, lines 40-45; col 8, lines 20-25; col 9, lines 40-50);

Carter does not explicitly disclose the claimed "database-management component configured to operate on the table to order the transactions within each group; and perform an analysis of the groups of transactions to find associations in the order of the transactions in the groups."

Anderson discloses database-management component configured to operate on the table to order the transactions within each group; and perform an analysis of the groups of transactions to find associations in the order of the transactions in the groups (col 6, lines 34-45).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the teachings of Carter such that the transaction groups are analyzed to determine associations. One of ordinary skill in the art would have been motivated to do this because it would provide a system that can determine consumer buying habits (col 6, lines 45-48).

Referring to Claim 14:

Carter discloses a method for use in analyzing associations in the order of transactions, the method comprising loading data from the transactions into a database system (col 3, lines 55-68; col 4, lines), where the data includes an entry for each transaction and wherein loading the data comprises grouping the transactions into groups (col 6, lines 40-45; col 8, lines 20-25; col 9, lines 40-50);

Carter does not explicitly disclose "selecting sessions of transactions belonging to the same group and corresponding to a single session; ordering the transactions within each session;

and performing an analysis of the sessions of transactions to find associations in the order of the transactions in the sessions."

Anderson discloses selecting sessions of transactions belonging to the same group and corresponding to a single session (col 21, lines 55-65); ordering the transactions within each session; and performing an analysis of the sessions of transactions to find associations in the order of the transactions in the sessions (col 22, lines 15-25).

Referring to Claim 2:

Carter and Anderson disclose the limitations as discussed in Claim 1 above. Anderson further discloses the data for each transaction includes a time stamp related to a time that the transaction occurred and wherein ordering the transactions comprises numbering the transactions based on the time stamps included in the data for the transactions (col 21, lines col 21, lines 45-46).

Referring to Claim 3:

Carter and Anderson disclose the limitations as discussed in Claim 2 above. Anderson further discloses the transactions comprises numbering the transactions in order from the transaction having the earliest time stamp to the transaction having the latest time stamp (col 21, lines col 21, lines 45-46, col 22, lines 15-20).

Referring to Claim 4:

Carter and Anderson disclose the limitations as discussed in Claim 1 above. Carter

further discloses loading the data from the transactions into the database system comprises

parsing the data for each transaction into fields in the database system; and identifying one of the

fields as a group identifier field where a group identifier for each transaction is stored (col 8,

lines 5-25; col 2, lines 5-20).

Referring to Claim 5:

Carter and Anderson disclose the limitations as discussed in Claim 4 above. Carter

further discloses loading the data from the transactions into the database system further

comprises identifying one of the fields as an item identifier field where an item identifier for

each transaction is stored (col 9, lines 50-55).

Referring to Claim 6:

Carter and Anderson disclose the limitations as discussed in Claim 1 above. Carter

further discloses wherein performing the analysis comprises performing an affinity analysis (col

6, lines 35-50).

Referring to Claim 15:

Carter and Anderson disclose the limitations as discussed in Claim 14 above. Anderson

further discloses each entry includes a time stamp related to a time that the transaction occurred

and selecting comprises selecting entries with time stamps lying in a predetermined range (col 21, lines 45-47).

Referring to Claim 16:

Carter and Anderson disclose the limitations as discussed in Claim 15 above. Anderson further discloses ordering comprises numbering the selected entries based on their respective time stamps (col 21, lines 45-46).

Referring to Claim 17:

Carter and Anderson disclose the limitations as discussed in Claim 16 above. Anderson further discloses numbering comprises numbering the selected entries from the earliest to the latest (col 22, lines 15-20).

Referring to Claim 18:

Carter and Anderson disclose the limitations as discussed in Claim 16 above. Anderson further discloses numbering comprises numbering the selected entries from the latest to the earliest (col 22, lines 15-20).

Referring to Claim 19:

Carter and Anderson disclose the limitations as discussed in Claim 16 above. Anderson further discloses numbering comprises numbering the selected entries based on their respective distance in time from a reference time (col 21, lines 55-60; col 22, lines 15-20).

Referring to Claim 21:

Carter and Anderson disclose the limitations as discussed in Claim 20above. Anderson

further discloses executable instructions that cause a computer to select sessions of transactions

belonging to the same group and corresponding to a single session (col 21, lines 55-60).

Referring to Claim 22:

Carter and Anderson disclose the limitations as discussed in Claim 20 above. Anderson

further discloses a time stamp related to a time that the transaction occurred and where, in

selecting sessions, the computer selects entries with time stamps lying in a predetermined range

(col 21, lines 44-46).

Referring to Claim 25:

Carter and Anderson disclose the limitations as discussed in Claim 24 above. Anderson

further discloses the database-management component is configured to select sessions of

transactions belonging to the same group and corresponding to a single session (col 21, lines 55-

60).

Referring to Claim 26:

Carter and Anderson disclose the limitations as discussed in Claim 25 above. Anderson

further discloses each entry includes a time stamp related to a time that the transaction occurred

and where, in selecting sessions, the database management system is configured to select entries with time stamps lying in a predetermined range (col 21, lines 45-50).

3.   Claim 7-13, 23 and 27 rejected under 35 U.S.C. 103(a) as being unpatentable over US 5878419 issued to Carter, herein referred to as Carter and US 5974396 issued to Anderson et al as applied to Claims 1 and 20 above, and further in view of US 5241648 issued to Cheng et al, herein referred to as Cheng and US 6061682 issued to Aggarwal, herein referred to as Aggarwal.

Referring to Claims 7, 23 and 27:

Carter and Anderson disclose the limitations as discussed in Claims 1, 20, and 24. Carter further disclose a method wherein loading data from the transactions into the database system comprises parsing the transaction data into fields in a base table in the database system (col 3, lines 55-68; col 4, lines); identifying one of the fields as a group identifier field where a group identifier for each transaction is stored (col 8, lines 22-25; col 9, lines 44-58); identifying one of the fields as an item identifier field where an item identifier for each transaction is stored (col 9, lines 44-58);

Carter and Anderson do not explicitly disclose the claimed "ordering the transactions in each group of transactions comprises concatenating an order number to the item identifier for each transaction and performing the analysis comprises building one or more support tables for one or more item identifiers with concatenated order number; and calculating support, confidence and lift by joining the support tables."

Cheng discloses ordering the transactions in each group of transactions comprises concatenating an order number to the item identifier for each transaction (Abstract, lines 5-14; col 5, lines 1-10).

Aggrawal discloses performing the analysis comprises building one or more support tables for one or more item identifiers with concatenated order number; and calculating support, confidence and lift by joining the support tables (col 9, lines 34-55; col 10, lines 50-55).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the teachings of Carter to include an indexing and support/confidence/lift calculation method. One of ordinary skill in the art would have been motivated to do this because it would allow a user to determine associations between transactional items (col 3, lines 25-30).

Referring to Claim 8:

Carter, Anderson, Cheng and Aggrawal disclose the limitations as disclosed in Claim 7 above. Aggrawal further discloses building the one or more support tables comprises counting the transactions containing various combinations of item identifiers with concatenated order number and dividing the count by a total number of groups to obtain a support for each of the combinations (col 8, lines 15-23).

Referring to Claim 9:

Carter, Anderson, Cheng and Aggrawal disclose the limitations as disclosed in Claim 7

above. Aggrawal further discloses building the one or more support tables comprises for each

item identifier with concatenated order number, counting the transactions containing the same

item identifier with concatenated order number and computing the support by dividing the count

by a total number of groups and storing the item identifier with concatenated order number and

the support in a first support table (col 8, lines 15-23).

Referring to Claim 10:

Carter, Anderson, Cheng and Aggrawal disclose the limitations as disclosed in Claim 9

above. Aggrawal further discloses building the one or more support tables further comprises

building a second base table by selecting transactions from the first base table that include an

item identifier corresponding to an item identifier and concatenated order number having a

support more than a predetermined value (col 8, lines 55-65; col 9, lines 30-60, col 9, lines 54-

58).

Referring to Claim 11:

Carter, Anderson, Cheng and Aggrawal disclose the limitations as disclosed in Claim 10

above. Aggrawal further discloses building the one or more support tables further comprises

counting the transactions in the second base table containing various combinations of item

identifiers with concatenated order number and dividing the count by a total number of groups in

the second base table to obtain a support for each of the combinations (col 8, lines 15-23).

Referring to Claim 12:

Carter, Anderson, Cheng and Aggrawal disclose the limitations as disclosed in Claim 10 above. Aggrawal further discloses building the one or more support tables further comprises counting the transactions in the second base table containing combinations of two specified item identifiers with concatenated order number and dividing the count by a total number of transactions in the second base table to obtain a support for each of the combinations; and storing the item identifiers and computed support in a two item support table combinations (col 8, lines 15-23).

Referring to Claim 13:

Carter, Anderson, Cheng and Aggrawal disclose the limitations as disclosed in Claim 10 above. Aggrawal further discloses building the one or more support tables further comprises counting the transactions in the second base table containing combinations of N specified item identifiers with concatenated order number and dividing the count by a total number of transactions in the second base table to obtain a support for each of the combinations; and storing the item identifiers and computed support in an N item support table combinations (col 8, lines 15-23).

Prior Art

4.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

US 6408295 issued to Aggarwal, Charu C. et al. Aggarwal discloses a system and

method for developing association rules which are personalized for a customer. The method

includes partitioning (clustering) a set of records corresponding to transactions of items into

discrete segments so that different parts of the data show different kinds of trends. The

clustering is used in order to create a segmentation of the data such that these trends are

captured in each segment. Consequently, a different set of association rules are relevant for

each segment.

US 6230166 issued to Velamuri, Syama S. et al. Velamuri discloses recording

transactions using a chronological list superimposed on an indexed list. A transaction log of

transaction entries is maintained as a chronological list superimposed on an indexed list.

Preferably, each transaction entry includes a transaction descriptor field, a time stamp field,

a chronological list pointer field and an indexed list pointer field. A first chronological list

pointer points to the oldest transaction entry in the transaction log and a last chronological list

pointer points to the latest transaction entry in the transaction log. The chronological list

pointer field of a transaction entry points to the next oldest transaction entry. The indexed list

includes a number of indexed list entry pointers.

Contact Information

6.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Monplaisir G Hamilton whose telephone number is 1703-305-

5116. The examiner can normally be reached on Monday - Friday (8:00 am - 4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kim Y Vu can be reached on 1703-305-4393. The fax phone numbers for the

organization where this application or proceeding is assigned are 1703-746-7239 for regular

communications and 1703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is 1703-305-3900.

Monplaisir Hamilton
January 23, 2003

SHAHID AL ALAM
PATENT EXAMINER